

## **AMENDMENTS TO THE CLAIMS**

Please replace the claims, including all prior versions, with the listing of claims below.

### **LISTING OF CLAIMS:**

1-4. (Canceled).

5. (Currently amended) A method of determining a [[a]] head-media spacing modulation of between a head and a portion substrate or of an actual disc media surface, comprising:

~~simulating a head passing in near proximity to a simulated disc media surface to generate generating an air bearing transfer function as a function of wavelength;~~

~~generating a measuring topography as a function of a distance in down track direction of the substrate or of [[for]] the actual disc media surface; [[and]]~~

~~performing a Fourier transform of the topography as a function of the distance to obtain a squared topography function as a function of wavelength;~~

~~multiplying the squared topography function as a function of wavelength and the air bearing transfer function as a function of wavelength to obtain a product; and~~

~~integrating the product over a range of wavelengths to provide obtain the head-media spacing modulation.~~

6. (Canceled)

7. (Currently amended) The method of claim 5 wherein the generating of measuring the topography as a function of distance comprises:

~~sampling topography as a function of distance of the portion substrate or of the actual disc media surface[[;]]~~

~~translating the actual disc topography sampled to wavelengths to provide a sampled topography; and~~

~~averaging the sampled topography to provide the topography function.~~

8. (Currently amended) The method of claim 5 wherein the simulating generating an air bearing transfer function as a function of wavelength comprises:

~~providing a simulated disc topography having a wavelength;~~

~~selecting a head to model;~~

~~providing air bearing code for the head selected;~~

~~providing operation parameters;~~

determining an air bearing transfer function from [[the]] ~~an~~ air bearing code the head[[;]]

~~determining simulated head media spacing modulation for each of a plurality of disc wavelengths; and~~

~~interpolating the air bearing transfer function with gradations of the wavelengths to provide the air bearing transfer function for the spectral density.~~

9. (Canceled)

10. (Canceled)

11. (Currently amended) The method of claim 5 further comprising providing a model for glide avalanche (GA) to relate the head-media spacing modulation with a variables variable affecting processing of the substrate or the actual disc media surface, the model comprising:

an equation where the GA equals

$$a [\int \Lambda^2(\lambda) Y(\lambda) d\lambda]^{1/2} + b,$$

where a and b are constants,  $\Lambda$  is an air bearing transfer function, Y is a squared topography function as a function of wavelength, and  $\lambda$  is wavelength.

12. (Original) The method of claim 11 wherein the model comprises integral boundaries from zero to one revolution of the disc media.

13. (Currently amended) The method of claim 5 further comprising providing a model for glide avalanche (GA) to relate the head-media spacing modulation with a variables variable affecting processing of the substrate or the actual disc media surface, the model comprising:

an equation where the GA equals

$$a[\int Y(\lambda) d\lambda + \int \Lambda^2(\lambda) Y(\lambda) d\lambda]^{1/2} + b,$$

where a and b are constants,  $\Lambda$  is an air bearing transfer function, Y is a squared topography function as a function of wavelength, and  $\lambda$  is wavelength.

14. (Original) The method of claim 13 wherein the model comprises a constant c for breaking the equation into two integrals.

15. (Original) The method of claim 14 wherein the constant c is between high frequency region and resonant frequency region.

16-20. (Canceled)